

## SUBCOMMITTEE: SUBCOMMITTEE #1

## HOUSE JOINT RESOLUTION NO. 101

## AMENDMENT IN THE NATURE OF A SUBSTITUTE

(Proposed by the House Committee on \_\_\_\_\_

on \_\_\_\_\_)

(Patron Prior to Substitute--Delegate Toscano)

Directing the Department of Mines, Minerals and Energy through the Virginia Solar Energy Development and Energy Storage Authority to conduct a study to determine what regulatory reforms and market incentives are necessary to increase the use of energy storage devices in the Commonwealth. Report.

WHEREAS, while the amount of electricity that can be generated is relatively fixed over short periods of time, the demand for electricity fluctuates throughout the day; and

WHEREAS, according to the U.S. Department of Energy, developing technology to store electrical energy so it can be available to meet demand whenever needed would be a major breakthrough in electricity distribution; and

WHEREAS, energy storage devices can manage the amount of power required to supply customers at times when need is greatest, which is during peak load, and can help make renewable energy, whose power output cannot be controlled by grid operators, smooth and dispatchable; and

WHEREAS, energy storage devices can also balance microgrids to achieve a good match between generation and load, provide frequency regulation to maintain the balance between the network's load and power generated, and achieve a more reliable power supply for high-tech industrial facilities; and

WHEREAS, while energy storage devices hold substantial promise for transforming the electric power industry, their adoption in the Commonwealth has been limited; and

WHEREAS, an analysis of actions that could increase the use of energy storage devices in the Commonwealth is timely and appropriate; and

25 WHEREAS, in 2015, the General Assembly established the Virginia Solar Energy Development  
26 Authority to facilitate, coordinate, and support the development of the solar industry in the  
27 Commonwealth; and

28 WHEREAS, in 2017, the General Assembly added energy storage to the Authority's charge,  
29 renaming it the Virginia Solar Energy Development and Energy Storage Authority, and

30 WHEREAS, an emerging energy storage industry has great potential as a job creator and for  
31 economic development; now, therefore, be it

32 RESOLVED by the House of Delegates, the Senate concurring, That the Department of Mines,  
33 Minerals and Energy be directed through the Virginia Solar Energy Development and Energy Storage  
34 Authority to conduct a study to determine what regulatory reforms and market incentives are necessary to  
35 increase the use of energy storage devices in the Commonwealth.

36 In conducting its study, the Virginia Solar Energy Development and Energy Storage Authority  
37 (the Authority) shall receive staff assistance from the Department of Mines, Minerals and Energy and  
38 shall consult with the State Corporation Commission, the Office of Consumer Counsel in the Office of  
39 the Attorney General, environmental organizations, electric utilities, third-party providers of energy  
40 storage devices, non-utility developers and owners of electric generation facilities, and other interested  
41 parties. In conducting the study and in collaboration with the consulted parties, the Authority shall:

42 1. Consider the types and viability of different energy storage technologies and cases for their use,  
43 including projects deployed in the Commonwealth and other states, and the potential applicability of these  
44 technologies to different service territories within the Commonwealth;

45 2. Consider existing operational data and results of testing and trial pilot projects from existing  
46 energy storage facilities;

47 3. Consider available information from PJM Interconnection, LLC, derived from PJM's testing and  
48 evaluation procedures;

49 4. Consider the integration of energy storage technologies with other programs that will result in  
50 the most economically efficient use of generation resources for society and cost-effective, energy-efficient  
51 grid integration and management;

5. Review energy storage regulatory policies, ownership models, cost recovery mechanisms, procurement targets, and market incentives in other states and use any data or results that are available from those states, as appropriate;

6. Review existing state regulatory policies and definitions and consider and determine appropriate revisions to facilitate the expansion of energy storage in the Commonwealth, including:

a. The feasibility of subjecting costs for energy storage to rate recovery and the appropriate standard for any such rate recovery;

b. Removing any policy-related barriers that restrict the ability to capture all of the societal benefits of energy storage;

c. Encouraging the expansion of energy storage in the Commonwealth through a variety of cost recovery mechanisms, including cost recovery through electric distribution rates; and

d. Encouraging the efficient and timely approval of interconnection of energy storage systems owned by an electric utility, a customer, or a third party that are connected to customer facilities or directly connected to transmission and distribution facilities;

7. Consider ways of ensuring that any energy storage policies that are established are technologically viable and cost-effective, including standards for the capacity, efficiency, useful life, and charging characteristics of the systems;

8. Examine whether and how pumped hydropower storage should be included in any regulatory policies or market incentives;

9. Consider policies to incentivize deployment of energy storage systems that are connected to customers' facilities and of systems that are directly connected to transmission and distribution facilities;

10. Identify appropriate metrics and standards for energy storage systems, such as energy capacity, charge and discharge rates, round trip efficiency, durability, and other appropriate metrics and standards;

11. Consider any policies, procurement targets, or other market incentives that would allow for diverse ownership models, including ownership of an energy storage system by an electric utility or another entity;

12. Consider the following purposes for energy storage:

- 79 a. Integrating intermittent generation from eligible renewable energy resources into the safe and  
80 reliable operation of the transmission and distribution grid;
- 81 b. Allowing intermittent generation from eligible renewable energy resources to operate at or near  
82 full capacity;
- 83 c. Reducing the need for fossil fuel-powered peaking generation facilities by using stored  
84 electricity to meet peak demand;
- 85 d. Reducing transmission and distribution line losses, including increased losses during periods of  
86 congestion on the grid;
- 87 e. Reducing the demand for electricity during peak periods and achieving permanent load-shifting;
- 88 f. Providing back-up power and grid resiliency;
- 89 g. Avoiding or delaying investments in upgrades to the transmission and distribution systems;
- 90 h. Using energy storage systems to provide the ancillary services otherwise provided by fossil-  
91 fueled generating facilities;
- 92 i. Using energy storage systems as a grid modernization tool that enhances reliability, resiliency,  
93 and power quality for electricity consumers; and
- 94 j. Integrating distributed energy resources more efficiently at customer sites and on the  
95 transmission and distribution systems;
- 96 13. Consider necessary steps to maintain a safe work environment where energy storage systems  
97 are deployed and the associated expenses to customers, electric utilities, or other parties;
- 98 14. Consider necessary steps for electric companies to efficiently support storage being connected  
99 to the transmission and distribution grid, including those related to customer service, regional transmission  
100 operator coordination, interconnection, other relevant issues, and the costs associated with those  
101 requirements;
- 102 15. Consider any other relevant aspect relating to financing initiatives; and
- 103 16. Consider whether barriers to the deployment of energy storage systems that exist in the  
104 Commonwealth also exist in PJM markets and programs and what changes are needed to eliminate those  
105 barriers.

When examining the cost-effectiveness issue of energy storage or market incentives under subdivision 7, the Authority and the Department of Mines, Minerals and Energy shall consider any benefits, including (i) cost savings to ratepayers from the provision of services such as energy price arbitrage, ancillary services, capacity, transmission, and distribution asset deferral or offsets; (ii) direct cost savings to customers that deploy energy storage systems and to others; (iii) an improved ability to integrate renewable resources; (iv) improved reliability and power quality; (v) the effect on retail electric rates over the life of a given energy storage system compared with the impact on retail electric rates of using a nonenergy storage system alternative over the life of the nonenergy storage system alternative, including system-wide impacts, such as long-term costs of avoided peak capacity, transmission, and distribution replacement deferral, and market price reductions or efficiency improvements; (vi) the economic, noneconomic, and environmental benefits of avoided use of fossil fuels through the deployment of energy storage systems; (vii) the ability to site storage systems compared with generation, transmission, or distribution assets; and (viii) the ability of storage systems to be deployed quickly and expanded easily.

Technical assistance shall be provided to the Authority by the State Corporation Commission. All agencies of the Commonwealth shall provide assistance to the Authority for this study, upon request.

The Authority shall complete its meetings for the first year by November 30, 2018, and for the second year by November 30, 2019, and the Authority shall submit to the Governor and the General Assembly an executive summary and report of its findings and recommendations for publication as a House or Senate document for each year. The executive summaries and reports shall be submitted as provided in the procedures of the Division of Legislative Automated Systems for the processing of legislative documents and reports no later than the first day of the next Regular Session of the General Assembly and shall be posted on the General Assembly's website.

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